



PATENTS ACT 1977

APPLICANT Conquest Planning Inc

ISSUE Whether patent application GB2110524.2 complies with the requirements of sections 1(1)(d) and 1(2)

HEARING OFFICER B Micklewright

DECISION

Introduction

- 1 Patent application GB210524.2, in the name of Conquest Planning Inc, is the national phase entry of international application PCT/CA2020/050275 filed under the Patent Cooperation Treaty (PCT) on 28 February 2020 with a claimed priority date of 01 March 2019. It was published under the PCT on 05 March 2020 as WO 2020/176981 A1. The national phase application was allocated the GB publication number GB2595092 A.
- 2 The examiner considered the invention to be excluded from patentability under sections 1(1)(d) and 1(2)(c) of the Patents Act 1977 (“the Act”) as a method of doing business and a program for a computer as such. The applicant disagreed. The examiner and the applicant could not reach agreement and the matter was therefore referred to myself for a decision based on the papers on file. I confirm that I have considered all the correspondence on file in my assessment.

The invention

- 3 The invention relates to the generation of financial plans relating to financial goals. It could, for example, be used by financial advisors as a tool to assist them in suggesting financial plans to their clients. The tool, in response to answers to questions entered by the user, the answers defining at least one or more financial goals, client lifestyle preferences and client financial information, generates a first financial plan and displays it to the user. The questions could for example relate to the age of the client, number and age of dependents, physical location of the client, current salary and projected retirement age. The lifestyle preferences could relate to projected retirement lifestyle, tolerance to investment risk, willingness to save tax refunds, willingness to delay retirement, willingness to reduce retirement spending, willingness to save more now by spending less now, and willingness to downsize in retirement. The financial goals could be home purchase, estate planning, retirement, insurance, a major purchase, and education.

- 4 An AI module then analyses the client lifestyle preferences to determine client lifestyle parameters. It generates, for the first financial goal, a set of modified financial plans modified by one of a set of financial strategies. The application discloses a number of possible financial strategies, for example increasing savings, increasing investing, delaying retirement age, delaying pension withdrawal age, optimising withdrawal plans, and optimising investment strategies. Each modified financial plan is assigned a score based on an increase in the respective modified financial plan relative to the first financial plan, and a cost of the corresponding respective financial strategy based on the client lifestyle parameters. The modified financial plans are then ranked, and a highest ranked plan is selected, the financial strategy corresponding to the highest ranked plan being displayed to the user.
- 5 The user may then either accept or reject the financial strategy corresponding to the highest ranked financial plan. If it is rejected the financial strategy corresponding to the next highest ranked financial plan is displayed. If it is accepted the user is asked if the financial goal has been met. If the first financial goal has not been met, the AI carries out further analysis and the process is repeated until the first financial goal has been met, with the display updated in real time.
- 6 The latest claims were filed on 09 May 2023. Of the 15 claims, claim 1 is the only independent claim and is set out below. I have also listed claims 8 and 11 as they are relevant to the applicant's submissions in relation to the contribution made by the invention.

1. A non-transitory computer-readable medium bearing code which, when executed by at least one processor of a computer system, causes the computer system to implement the method comprising:

- a) issuing, over a network, a stream of questions to a user computing device;
- b) receiving, over the network, a stream of inputs from the user for a financial plan module in response to the stream of questions, at least a first subset of the stream of inputs defining one or more financial goals, a second subset of the stream of inputs defining client lifestyle preferences and a third subset of the stream of inputs defining client financial information;
- c) executing the financial plan module to generate a first financial plan comprising the one or more financial goals using the stream of inputs;
- d) displaying the first financial plan to the user;
- e) running an artificial intelligence engine, said artificial intelligence engine:
- f) analyzing the stream of inputs and determining client lifestyle parameters from the client lifestyle preferences;
- g) accessing each respective one of a set of financial strategies and executing the financial plan module to generate a respective one of a set of modified financial plans, each respective one of the set of modified financial plans representing the first financial goal as modified by the respective one of the set of financial strategies;

h) assigning a score to each respective one of the set of modified financial plans based on an increase in said respective one of the set of modified financial plans relative to the first financial plan and a cost of the corresponding respective one of the series of financial strategies based on the client lifestyle parameters;

i) ranking each respective one of the set of modified financial plans relative to each other based on said respective score; and

j) selecting a highest ranked modified financial plan of the set of modified financial plans; and

k) modifying the display to show the respective one of the series of financial strategies corresponding to the highest ranked modified financial plan,

l) at the user computer device, said user accepting or rejecting the respective one of the series of financial strategies corresponding to the highest ranked financial plan, wherein:

if the user rejects the highest ranked financial plan, modifying the display to show the next respective one of the series of financial strategies corresponding to the highest ranked financial plan;

if the user accepts the highest ranked financial plan, asking the user if the financial goal has been met, wherein:

if the first financial goal has not been met, setting the accepted highest ranked financial plan as the first financial plan and repeating steps (e) to (l) until the financial goal has been met, and modifying the display in real time.

8. The non-transitory computer-readable medium bearing code according to claim 1 wherein the method further comprises repeating steps (c) to (l) for a second financial goal.

11. The non-transitory computer-readable medium bearing code according to claim 1, and further including training the artificial intelligence to develop a financial plan for achieving the one or more financial goals,

characterised in that said artificial intelligence engine is configured to learn knowledge about general financial plan preferences from past ones of client financial plans and apply the learned knowledge to future ones of client financial plans.

The law

7 Section 1 the Act sets out the requirements for patentable inventions:

1.-(1) A patent may be granted only for an invention in respect of which the following conditions are satisfied, that is to say –

(a) the invention is new;

(b) It involves an inventive step;

(c) it is capable of industrial application;

(d) the grant of a patent for it is not excluded by subsections (2) and (3) or section 4A below;

and references in this Act to a patentable invention shall be construed accordingly

8 Section 1(2) of the Act states:

1.-(2) It is hereby declared that the following (among other things) are not inventions for the purposes of this Act, that is to say, anything which consists of—

...

(c) A scheme, rule or method for performing a mental act, playing a game or doing business, or a program for a computer;

...

but the foregoing provision shall prevent anything from being treated as an invention for the purposes of this Act only to the extent that a patent or application for a patent relates to that thing as such.

9 The provisions of Section 1(2) were considered by the Court of Appeal in *Aerotel*¹ where a four-step test was set out to decide whether a claimed invention was excluded from patent protection:

(1) Properly construe the claim;

(2) Identify the actual contribution;

(3) Ask whether it falls solely within the excluded subject matter;

(4) Check whether the actual or alleged contribution is actually technical in nature.

10 It was stated by Jacob LJ in *Aerotel* that the test is a re-formulation of and is consistent with the previous 'technical effect approach with rider' test established in previous UK case law. Kitchin LJ noted in *HTC v Apple*² that the *Aerotel* test is followed in order to address whether the invention makes a technical contribution to the art, with the rider that novel or inventive purely excluded matter does not count as a 'technical contribution'.

11 Lewison J in *AT&T/CVON*³ set out five signposts that he considered to be helpful when considering whether a computer program makes a technical contribution. Lewison LJ reformulated the signposts in *HTC v Apple* in light of the decision in *Gemstar*⁴. The signposts are:

i) Whether the claimed technical effect has a technical effect on a process which is carried on outside the computer;

ii) Whether the claimed technical effect operates at the level of the architecture of the computer; that is to say whether the effect is produced irrespective of the data being processed or the applications being run;

¹ *Aerotel Ltd v Telco Holdings Ltd and Macrossan's Application* [2006] EWCA Civ 1371

² *HTC Europe Co Ltd v Apple Inc* [2013] EWCA Civ 451

³ *AT&T Knowledge Ventures/CVON Innovations v Comptroller General of Patents* [2009] EWHC 343 (Pat)

⁴ *Gemstar-TV Guide International Inc v Virgin Media Ltd* [2010] RPC 10

iii) Whether the claimed technical effect results in the computer being made to operate in a new way;

iv) Whether the program makes the computer a better computer in the sense of running more efficiently and effectively as a computer;

v) Whether the perceived problem is overcome by the claimed invention as opposed to merely being circumvented.

Assessment

12 I will use the *Aerotel* approach in my assessment.

Step (1): Properly construe the claim

13 Claim 1 refers initially to receiving, as an input, “one or more financial goals” in step a). The first financial plan generated in step c) comprises the “one or more financial goals”. Step g) however refers to “each respective one of the set of modified financial plans representing the first financial goal”. The claim later goes on to refer to “asking the user if the financial goal has been met” and then, in its final part, carrying out certain actions “if the first financial goal has not been met”.

14 It is unclear whether the references to “first financial goal” or “the financial goal” in the claim relates to the first of the “one or more financial goals” or to all of the “one or more financial goals”.

15 Having read the description (see for example page 25 lines 15-19), it is apparent that each financial strategy relates to a specific financial goal. It therefore seems to me that, whilst the first financial plan relates to all the selected goals, each of the modified plans relates to the first goal as modified by one of the set of financial strategies. The modified plans do not therefore relate to any of the subsequent goals provided as an input. Claim 8 relates to considering a second financial goal.

16 Claim 1 also refers to assigning a score to each modified financial plan based on “an increase in said respective one of the set of modified financial plans relative to the first financial plan and a cost of the corresponding respective one of the series of financial strategies based on the client lifestyle parameters”. It is not immediately evident what the “increase” and “cost” relate to. Having read the description (see for example pages 25 and 26) I construe the “increase” to relate to an increase toward completion of the financial goal to which the modified plan relates. According to page 26 lines 7-14 of the description the “cost” relates to a perceived cost of a financial strategy that represents something the clients have indicated they are reluctant to do based on the lifestyle parameters. For example a client may not wish to downsize their home. I therefore construe the term “cost” accordingly.

Step (2): Identify the actual contribution

17 Identifying the contribution in the second step of this test is critical and I refer to the following paragraph in *Aerotel* for guidance:

“43. The second step – identify the contribution - is said to be more problematical. How do you assess the contribution? Mr Birss submits the test is workable – it is an exercise in judgment probably involving the problem said to be solved, how the

invention works, what its advantages are. What has the inventor really added to human knowledge perhaps best sums up the exercise. The formulation involves looking at substance not form – which is surely what the legislator intended.”

18 According to the applicant, the claimed invention differs from prior art ways of producing financial plans such as retirement plans in that, rather than merely producing a retirement plan report, it enables planning for obtaining or meeting other financial goals throughout the client’s projected lifespan by incorporating a plurality of financial strategies. The invention also gathers client lifestyle preferences. Once an initial financial plan has been generated, an artificial intelligence engine generates modified financial plans for a specific financial goal, these plans being modified based on the client lifestyle preferences and each modified plan being modified based on a respective one of the financial strategies. The financial strategy corresponding to the highest ranked financial plan is presented to the client for selection or rejection. The user’s client then considers the implications of a first financial strategy presented by the recommendation tool and then decides whether to accept or reject it. If this first financial strategy is accepted, the recommendation tool presents a modified financial plan that shows the effect that the selection of this first financial strategy by the client has on the attainment of their financial goals in real time.

19 In their attorney’s letter of 09 May 2023 the applicant considered the contribution to be:

“a holistic planning recommendation tool that is distinguished from the prior art at least as follows:

(a) a financial plan is generated that includes more than projected retirement income at a number of different retirement ages. Specifically, the holistic plan shows how a number of additional financial goals can be achieved in addition to retirement income by following a plurality of financial strategies, each respective one having been selected by the client from a larger list of possible financial strategies.

(b) the system modifies the financial plan in real time based on each individual financial strategy selection made by the client and revised plans are presented to the client in real time so that the client can see how each of the small modifications or incremental steps produced by the respective one financial strategy selected by the client advances the client towards achieving their financial goals.

(c) the system includes an AI module that learns from selections made by previous clients so that the list of financial strategies suggested to a new client are those considered by the AI most likely to be accepted by the new client based on the AI’s comparison of the new client’s lifestyle profile to the selections made by previous clients with a similar lifestyle profile.”

20 Whilst the first financial plan comprises one or more financial goals, I note that the invention claimed in claim 1 generates modified financial plans that relate only to a first financial goal. It is not until dependent claim 8 that processing of a second financial goal is claimed. I do however agree that, for the first financial goal (which may not relate to retirement income), a number of financial strategies are analysed to generate modified financial plans in real time, albeit that the modified financial plans are only modified in relation to the first financial goal (and, in claim 8, to a second financial goal). Initially the highest ranked plan (ranked according to an

increase in the plan and to cost) is displayed, and the next ranked plan is displayed if the highest ranked plan is rejected.

- 21 If the user accepts the modified financial plan displayed, the user confirms whether the first financial goal has been met, and, if it has not, the steps of the process are repeated in real time with the accepted modified financial plan as the first financial plan, until the financial goal has been met.
- 22 The AI module analyses the inputs and accesses financial strategies to generate modified financial plans, assigning a score to each modified plan, and ranking these modified plans. There is no disclosure in claim 1 of the AI learning from selections made by previous clients, although this type of learning is a common feature of AI algorithms. This feature is however claimed in claim 11 and claims 12-15 also relate to analysing past client financial plans to improve the AI module's analysis of financial strategies.
- 23 I would therefore adapt the contribution made by claim 1 identified by the applicant as follows:
 - A planning recommendation tool which:
 - (a) in response to inputs including one or more financial goals, client lifestyle preferences and client financial information, generates a first financial plan comprising a first financial goal (which may not relate to retirement income). A number of financial strategies are analysed, along with client preferences, to generate modified financial plans in real time, each representing a modified first financial goal.
 - (b) initially displays the highest ranked plan (ranked according to an increase in the plan and to cost), the next ranked plan being displayed in real time if the highest ranked plan is rejected by the client. If the user accepts the displayed modified financial plan, the user confirms whether the first financial goal has been met, and, if it has not, the steps of the process are repeated in real time with the accepted modified financial plan as the first financial plan, until the financial goal has been met. so that the client can see how each of the small modifications or incremental steps produced by the respective one financial strategy selected by the client advances the client towards achieving their financial goals.
 - (c) uses an AI module to analyse the inputs and access financial strategies to generate modified financial plans, assign a score to each modified plan, and rank these modified plans, the higher ranked plans being those considered by the AI most likely to be accepted by the new client based on client preferences, an increase in the financial goal, and cost.
- 24 Claim 8 makes an additional contribution of repeating steps (c) to (l) for a second financial goal, thereby enabling a holistic plan which shows how additional goals may be achieved.
- 25 Claim 11 makes an additional contribution of training the AI to develop a financial plan for achieving the one or more financial goals by learning from past client financial plans.

Steps (3) and (4): Ask whether it falls solely within the excluded subject matter; check whether the actual or alleged contribution is actually technical in nature

- 26 The applicant made various submissions as to why the contribution is not a method of doing business or a program for a computer as such. In their letter of 09 May 2023 the applicant's attorney stated that the invention "is not a method of doing business in that no decisions are made by the computer program, but rather the computer program is only a recommendation tool that provides a list of financial strategies to be considered by the client in real time." Moreover they argue that the data is not simply financial data, but also information for the generation of a lifestyle profile. They also submitted that "no financial decision is made directly by the invention, such as the buying or selling of securities, and the invention is not directed to a method for carrying out a business but rather to a method for generating an article of manufacture, in this case, a holistic plan to be followed by the client for attaining their financial goals." They stated that:

"all of the thought processes and decision making regarding which financial strategies are selected for modifying the holistic plan take place outside of the computer mainframe ... and clearly take place in the real world, that is, are selected by the client only after deliberation by the client as to whether or not this modification is something that will be acceptable to them and their lifestyle."

- 27 The exclusion for "methods of doing business" defined in section 1(2)(c) of the Act is not limited to financial or commercial activities but includes broader classes of business such as administrative, organisational or management processes. Moreover the exclusion is not limited to a way of conducting an entire business, as the Court of Appeal confirmed in paragraphs 68-71 of *Aerotel*, but includes tools to facilitate business transactions or procedural steps having administrative or financial character.
- 28 I accept that the invention relates to an improved way of recommending financial plans by making use of the AI module to generate modified financial plans in real time based on client lifestyle preferences as well as other input data, and modifying these plans based on selections made by the client so as to achieve the financial goals. But these are all steps of a business process, namely a financial tool for the development of financial plans and strategies and recommendation of such plans to clients. It is well established that a better business method is still a business method and does not assist in providing a technical contribution, as noted by Fox LJ in *Merrill Lynch's Application*⁵:

"The fact that a method of doing business may be an improvement on previous methods of doing business does not seem to me to be material. The prohibition in section 1(2)(c) is generic; qualitative considerations to not enter into the matter."

- 29 Moreover the implementation of a business method in a computer system, including using an AI module, does not make a contribution technical. In *Halliburton Energy Services Inc*⁶ Birss J stated, at paragraph 35:

⁵ *Merrill Lynch's Application* [1989] RPC 561

⁶ *Re Halliburton Energy Services Inc* [2011] EWHC 2508 (Pat)

“The business method cases can be tricky to analyse by just asking whether the invention has a technical effect or makes a technical contribution. The reason is that computers are self evidently technical in nature. Thus when a business method is implemented on a computer, the patentee has a rich vein of arguments to deploy in seeking to contend that his invention gives rise to a technical effect or makes a technical contribution. For example the computer is said to be a faster, more efficient computerized book keeper than before and surely, says the patentee, that is a technical effect or technical advance. And so it is, in a way, but the law has resolutely sought to hold the line at excluding such things from patents. That means that some apparently technical effects do not always count. So a computer programmed to be a better computer is patentable (Symbian) but as Fox LJ pointed out in relation to the business method exclusion in Merrill Lynch, the fact that the method of doing business may be an improvement on previous methods is immaterial because the business method exclusion is generic.”

- 30 The applicant submitted that the selection of the holistic plan takes place outside of the computer, because it is made by the client, and is a direct link with physical reality. This is however not a *technical* effect external to the computer but rather is an element of a business method relating to selecting financial strategies and developing a financial plan. Moreover the AI module also contributes to the business tool of recommending financial plans, and the mere fact that it learns from previous plans does not alter this; it is still a business method. Nor does the ability to consider multiple financial goals, or the fact that the input data relates to lifestyle data as well as financial data, take the invention outside the business method exclusion. It is an improvement to the business tool and does not relate to an improvement in a technical field.
- 31 The invention is implemented using a computer program, but this doesn't mean that it is necessarily excluded. What matters is whether it make a technical contribution. Whilst I have already established that the invention relates to a business method, I will go on to consider the *AT&T* signposts to determine whether the computer program provides a technical contribution. In the correspondence, discussions have focussed on the first, third and fifth signposts and I will consider these signposts in turn.

Signpost i) Whether the claimed technical effect has a technical effect on a process which is carried on outside the computer

- 32 I have already considered the applicant's argument that the selection by a client of a financial plan is a technical effect on a process carried on outside the computer and have concluded that it is an element of a business method rather than a technical effect. Whilst such selections may be made by a person, and so take place outside a computer, they relate to decisions concerning the production of a financial plan and are elements of a business method. There is no *technical* effect on a process outside of the computer.
- 33 The applicant also argued that the invention provides a technical result, namely ""a graphic in real-time to an advisor, for example, a financial planner, for the generation of a financial plan for a client." I note however that there is nothing technical in the manner the graphic is displayed, or how it functions as a user interface. Rather it is characterised by the information it is displaying. This information is information

relating to financial plans and there is no technical effect on a process outside of the computer.

- 34 Nor does the invention provide a technical effect external to the computer by “avoiding the trial and error process of providing a financial plan” or “avoiding human bias”. These effects relate to the functioning of the business method and therefore lie in the field of business methods. They do not make a technical contribution.

Signpost iii) Whether the claimed technical effect results in the computer being made to operate in a new way

- 35 In relation to the third signpost, the applicant referred to the IPO’s guidelines on “Examining patent applications relating to artificial intelligence (AI) inventions”⁷ and argued that the present invention is similar to scenario 17 set out in those guidelines. These scenarios are intended to provide examples as to what may or not be patentable in the field of AI inventions. Scenario 17 is entitled “Special purpose processing unit for machine learning computations”. The applicant considered the present invention to be similar to that of Scenario 17 because “it has several modules or processing units that perform technical tasks”, namely the Strategic Advice Manager (SAM) module, and an AI module. Whilst the invention of Scenario 17 does have a control unit, I can see very little similarity between the present invention and that of Scenario 17. Scenario 17 relates to performing machine learning calculations and there is no synergy between the two inventions.

- 36 The computer used for the present invention is entirely standard and does not operate in a new way (nor, for that matter, does it run more efficiently or effectively as a computer as is required for signpost iv). The computer runs the program required for the invention, and the new elements of the invention relate to the way the business method works, not to the way the computer works.

Signpost v): Whether the program makes the computer a better computer in the sense of running more efficiently and effectively as a computer

- 37 The applicant’s attorney made the following submission in relation to the fifth signpost in their letter of 9 May 2023:

“The perceived problems with the prior art are the time taken to prepare a retirement plan and the difficulties associated with making modifications to that plan. The Applicant’s invention overcomes these problems by providing the financial planner with a recommendation tool that can be used to generate and modify a holistic plan in real time wherein all of the modifications (financial strategies) are selected by the client, thereby actively involving the client in the process of generating the holistic plan. Furthermore, as discussed above, these financial strategies are small lifestyle modifications that individually would not result in the financial goals being attained but when combined together, significant effects are seen. As such, the perceived problems are being overcome by the Applicant’s invention, not simply circumvented, in that a financial plan is generated in real time by selection of recommended financial strategies by the client rather than the preparation of a financial plan by a financial planner that takes weeks.”

⁷ Available online at <https://www.gov.uk/government/publications/examining-patent-applications-relating-to-artificial-intelligence-ai-inventions>

- 38 I accept this identification of the problem. However, difficulties associated with preparing and modifying financial plans are not technical problems but rather lie in the field of business methods. Moreover the solution proposed is also not a technical solution but rather a solution involving developing a business method to solve the problems with preparing and modifying financial plans. I therefore conclude that the fifth signpost does not point to a technical contribution.
- 39 Taking a step back, the invention relates to a tool for recommending financial plans that can modify plans in real time and make recommendations to users. An AI module is used to generate, and rank, modified financial plans for achieving certain financial goals. The invention relates entirely to this administrative process. It does not make any improvements to a computer in a technical sense, nor is there a technical effect on a process outside the computer. Rather, the invention's contribution is in the field of improving recommendations of financial plans to achieve financial goals, something lying entirely in the business method exclusion.
- 40 I cannot find any element of the contribution made by any of claims 1, 8 or 11 (or by any of the other dependent claims, for that matter) which is technical in nature and takes the contribution outside of the business method exclusion. I therefore conclude that the invention relates to a method of doing business.
- 41 The invention makes use of a computer program, but I have found that this usage does not impart a technical contribution. I therefore conclude that the invention lies solely in the excluded fields of a method of doing business as such and a program for a computer as such.

Conclusion

- 42 I have found that the invention is excluded from patentability as a method of doing business as such and a program for a computer as such. I therefore refuse the application under section 18(3).

Appeal

- 43 Any appeal must be lodged within 28 days after the date of this decision.

B MICKLEWRIGHT

Deputy Director, acting for the Comptroller